

**REMARKS**

Claims 4-16 are all the claims pending in the application. Claims 15 and 16 have been newly added herewith.

**Claim Objections**

Claim 8 stands objected to for informalities. Applicants have amended claim 8 in a manner believed to overcome the objection.

**Claim Rejections - 35 U.S.C. § 102**

Claims 8, 10, 12 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by newly applied Heiberg (U.S. Patent No. 5,944,761). Applicants respectfully traverse.

Heiberg discusses two different control systems. The first is a fixed frequency rejection system 10, shown in Fig. 1. Heiberg gives the example of solar panels snapping due to sudden temperature variations as an example of a fixed torque frequency which can be rejected by the system of Fig. 1 (see column 2, lines 31-38). However, Heiberg explains that the system of Fig. 1 cannot correct for disturbance frequencies which vary with time and therefore proposes the system as shown in Fig. 2 (see column 2, lines 63-67). The systems shown in Fig. 1 and Fig. 2 are two separate systems.

Initially, while Figs. 1 and 2 are distinct systems, the Examiner relies on elements of each of the systems in combination to reject the pending claims. Particularly, in asserting that the system of Heiberg Fig. 2 anticipates the claimed invention, the Examiner asserts that the Heiberg solar panels constitute the claimed elongated deployable members. However, as discussed above, Heiberg teaches that the solar panels provide a fixed torque frequency disturbance, which

may be corrected by the system of Fig. 1 (see column 2, line 35), not a variable frequency disturbance for which the system of Fig. 2 is designed. Heiberg does not teach that the system of Fig. 2 would be used to correct the frequency disturbance caused by the solar panels (the Examiner's alleged elongated deployable members). It is well settled that different embodiments may not be combined absent a suggestion to do so. *Ex parte Beuther*, 71 USPQ2d 1313, 1316 (BPAI 2003); *In re Arkley*, 455 F.2d 586, 587-588, 172 USPQ 524, 526 (CCPA 1972). Yet in this case, the Examiner combines elements of the embodiment of Figs. 1 and 2 without identifying a suggestion for the combination.

Furthermore, the conclusion that the Heiberg system “must inherently” have a bandwidth that contains the lowest and most energetic frequencies is not only unsupported in the disclosure, but is actually contradicted by the Fig. 2, element 116 and the accompanying description in the specification. Fig. 2 illustrates essentially a single frequency of interest,  $\omega_d$ , the peak in Fig. 2, which is the “frequency of the disturbance” (column 3, line 25). However, Fig. 2 also shows that this frequency  $\omega_d$  is not the lowest frequency. Instead, Fig. 2 shows frequencies which are lower than the frequency of the disturbance  $\omega_d$  with which Heiberg Fig. 2 is concerned. Therefore, it cannot be inferred that the control loop bandwidth “must inherently” contain the lowest and most energetic frequencies as claimed. As shown in Fig. 2, Heiberg only discloses that the control loop would include the frequency  $\omega_d$ , which does not include the lowest and most energetic frequency.

Also, Heiberg does not teach using the system of Fig. 2 for correcting the disturbances of solar panels because it is assumed that the system of Fig. 1 is adequate for that purpose. There is

nothing disclosed in Heiberg for asserting that the system of Fig. 2 would be suitable or preferable over the system of Fig. 1 for solar panels.

In view of the above, Heiberg fails to disclose a satellite with a plurality of elongated deployable members and an attitude control system as recited in claim 8. Claims 10, 12 and 13 depend from claim 8 and are therefore allowable at least by virtue of their dependency.

**Claim Rejections - 35 U.S.C. § 103**

**Claims 4, 6 and 14**

Claims 4, 6 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heiberg (U.S. Patent No. 5,944,761). Applicants respectfully traverse.

Claim 4 is allowable at least for reasons similar to claim 8. Claims 6 and 14 depend from claim 4 and are therefore allowable at least by virtue of their dependency.

**Claims 5, 7, 9 and 11**

Claims 5, 7, 9 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heiberg as applied to claims 4, 8 and 10 and further in view of Parvez et al. (U.S. Patent No. 6,089,507). Claims 5 and 7 depend from claim 4 and claims 9 and 11 depend from claim 8. Therefore, claims 5, 7, 9 and 11 are allowable by virtue of their respective dependencies.

**New Claims**

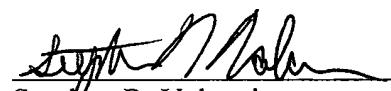
Claims 15 and 16 have been newly added in order to provide a more varied scope of protection. Claim 15 depends from claim 4 and claim 16 depends from claim 8. Therefore, claims 15 and 16 are allowable at least by virtue of their respective dependencies.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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